

# **Kennecott South Facilities Groundwater Remediation**

**ANNUAL PROGRESS REPORT 2004**

Kelly Payne, Kennecott Utah Copper  
October 12, 2005

# CERCLA History

- Site proposed for NPL listing in 1994
- MOU in 1995 between EPA, State of Utah, and Kennecott
- RI/FS completed 1998
- ROD issued 2000
- RDRA completed 2002
- Consent Decree anticipated in 2005



# ROD Selected Remedy

- Maintain source controls
- Contain the plume
- Remediate the aquifer
- Treat extracted groundwater and dispose of treatment residuals

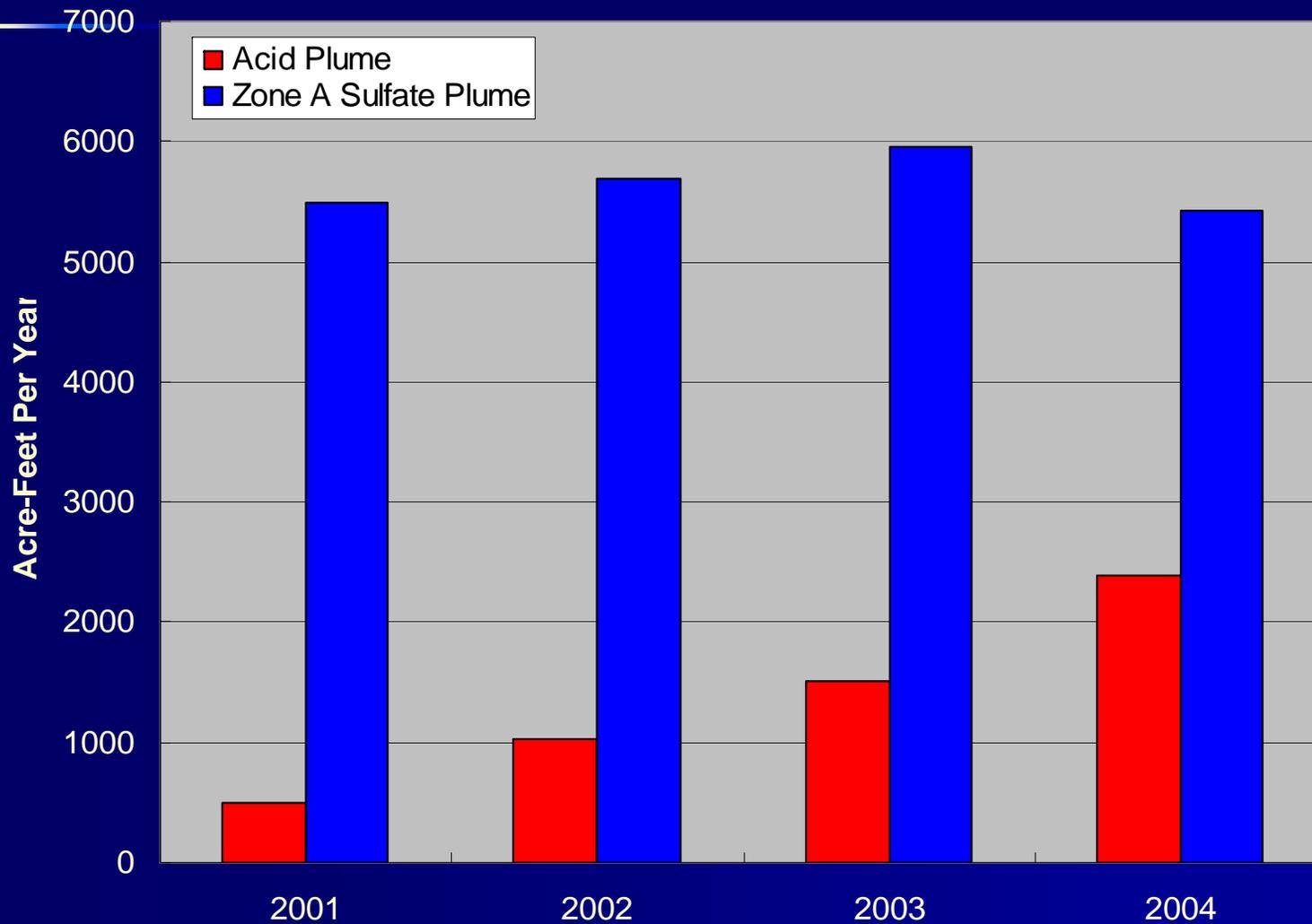


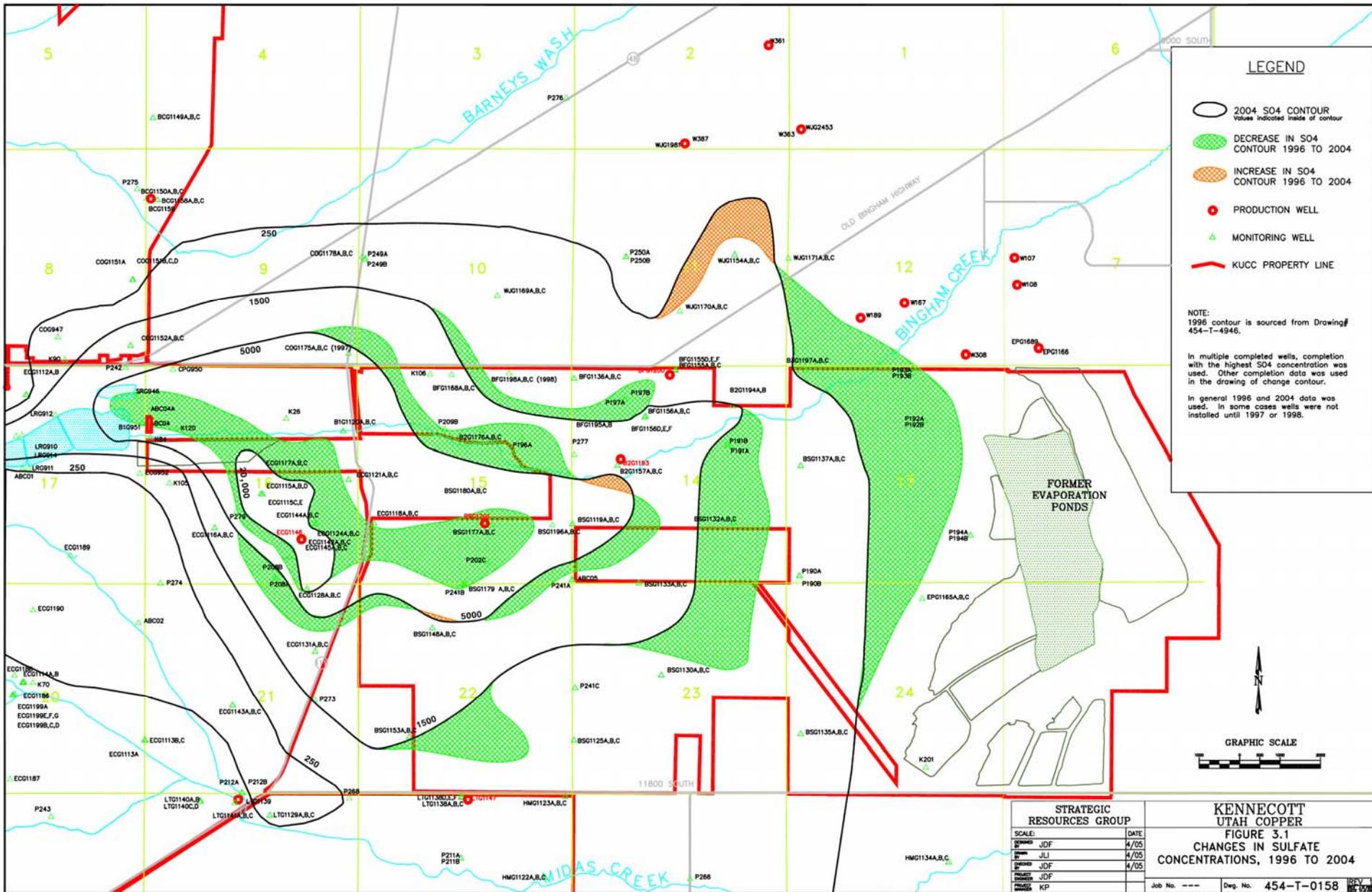
# Remedial System

- East Side Collection System
- Two acid wells
- Three barrier wells
- Reverse Osmosis Plant
- Tailings line and impoundment



# Annual Groundwater Extraction





**LEGEND**

- 2004 SO4 CONTOUR  
Values indicated inside of contour
- DECREASE IN SO4  
CONTOUR 1996 TO 2004
- INCREASE IN SO4  
CONTOUR 1996 TO 2004
- PRODUCTION WELL
- MONITORING WELL
- KUCC PROPERTY LINE

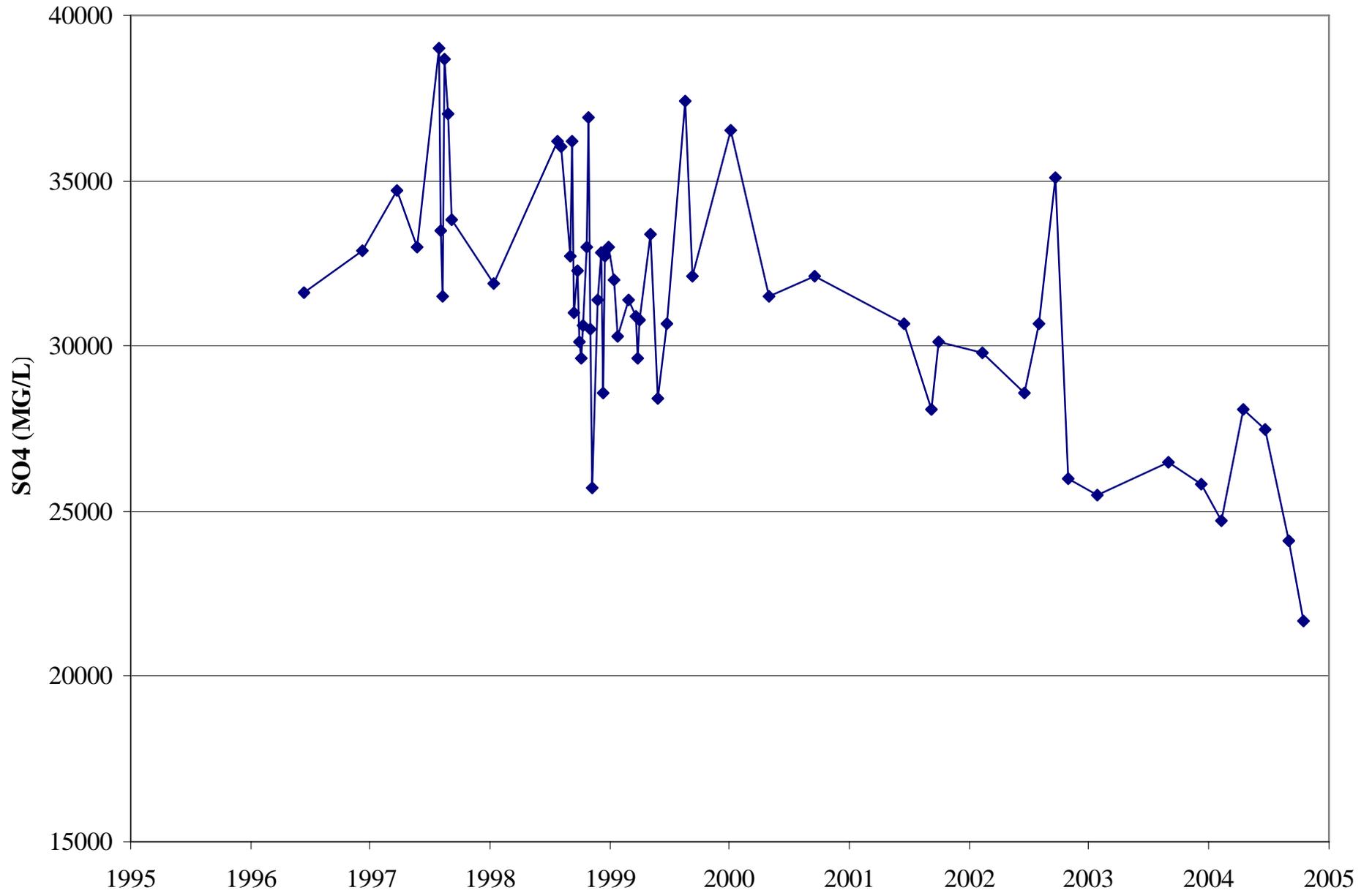
NOTE:  
1996 contour is sourced from Drawing# 454-T-4946.

In multiple completed wells, completion with the highest SO4 concentration was used. Other completion data was used in the drawing of change contour.

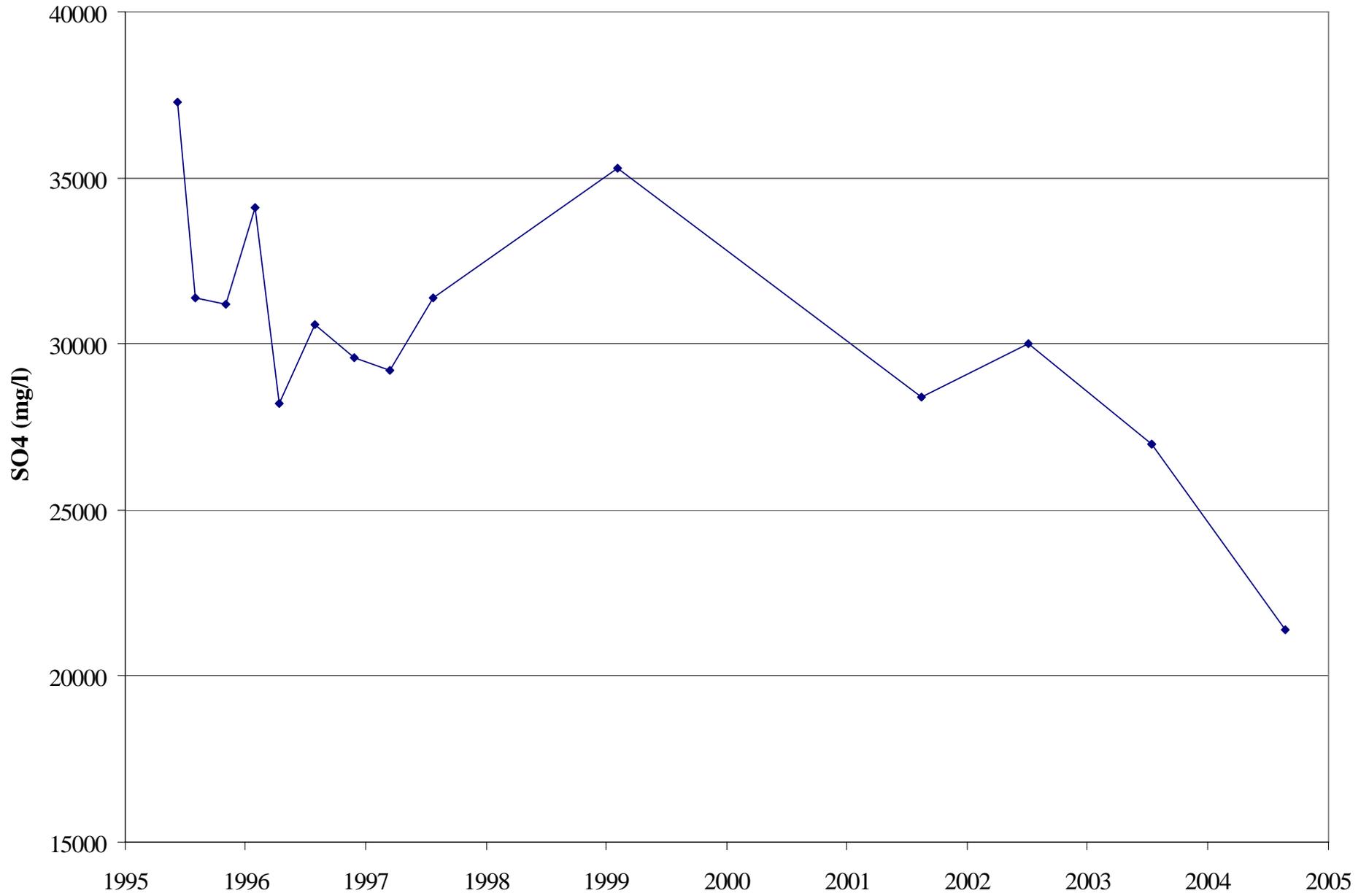
In general 1996 and 2004 data was used. In some cases wells were not installed until 1997 or 1998.

STRATEGIC RESOURCES GROUP		KENNECOTT UTAH COPPER	
SCALE:	DATE	FIGURE 3.1	
BY: JDF	4/05	CHANGES IN SULFATE	
CHKD: JLI	4/05	CONCENTRATIONS, 1996 TO 2004	
APP: JDF	4/05		
PROJECT:			
DRAWN:			
CHECKED:			
DATE:			
BY: KP		Job No. ---	Dwg. No. 454-T-0158

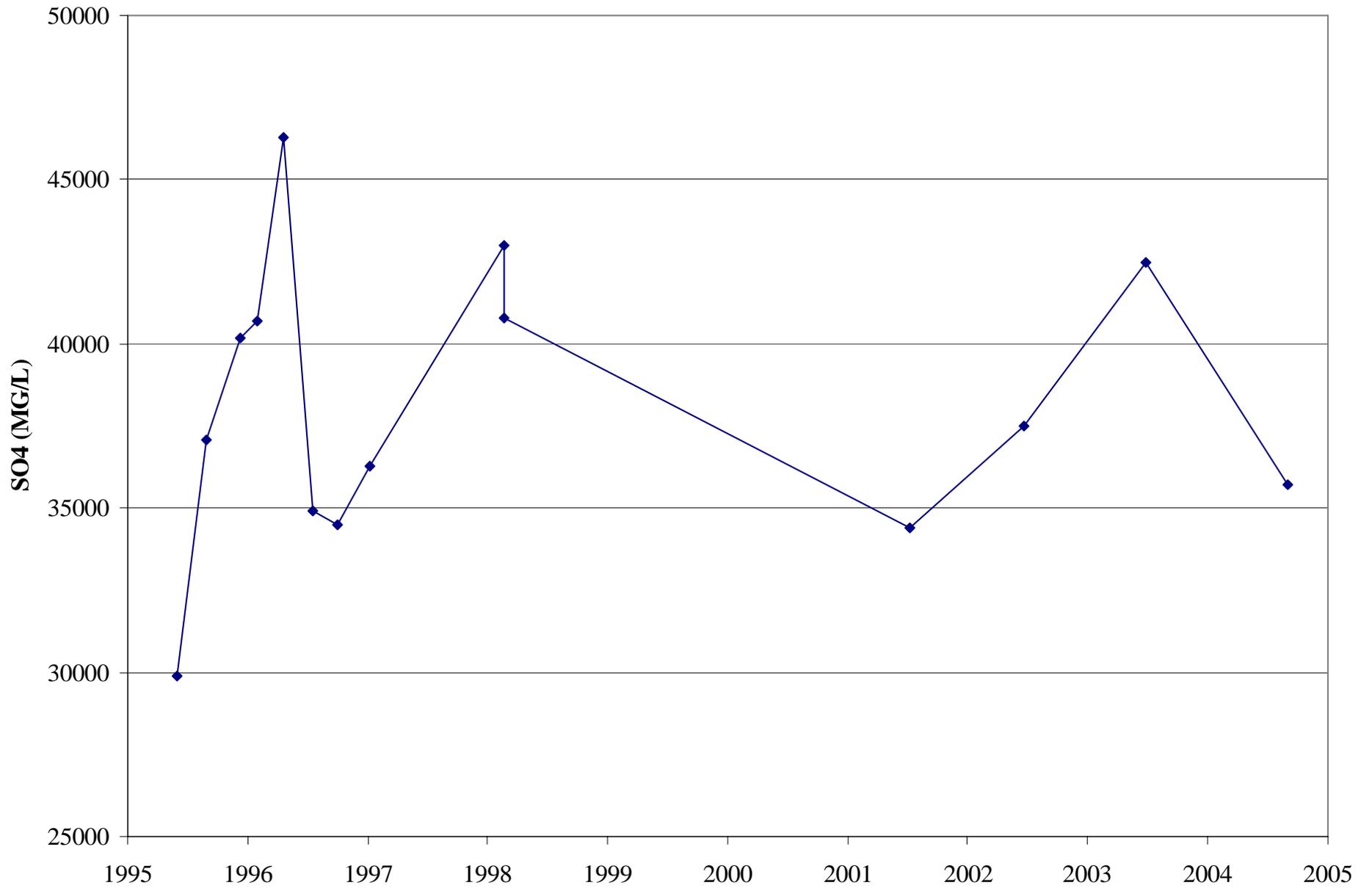
# ECG1146 SO4 CONCENTRATION



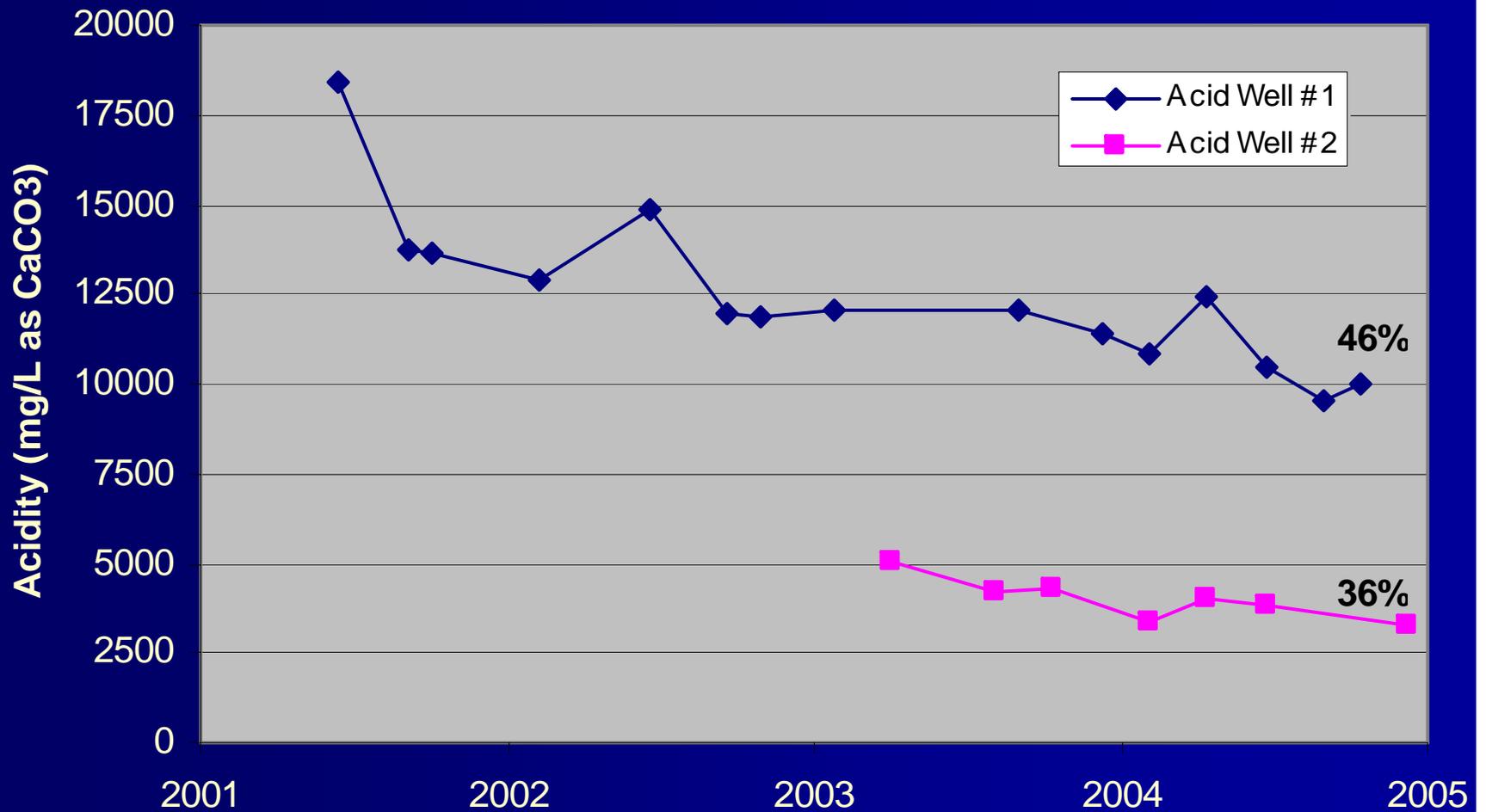
# ECG1128A SO4 CONCENTRATION



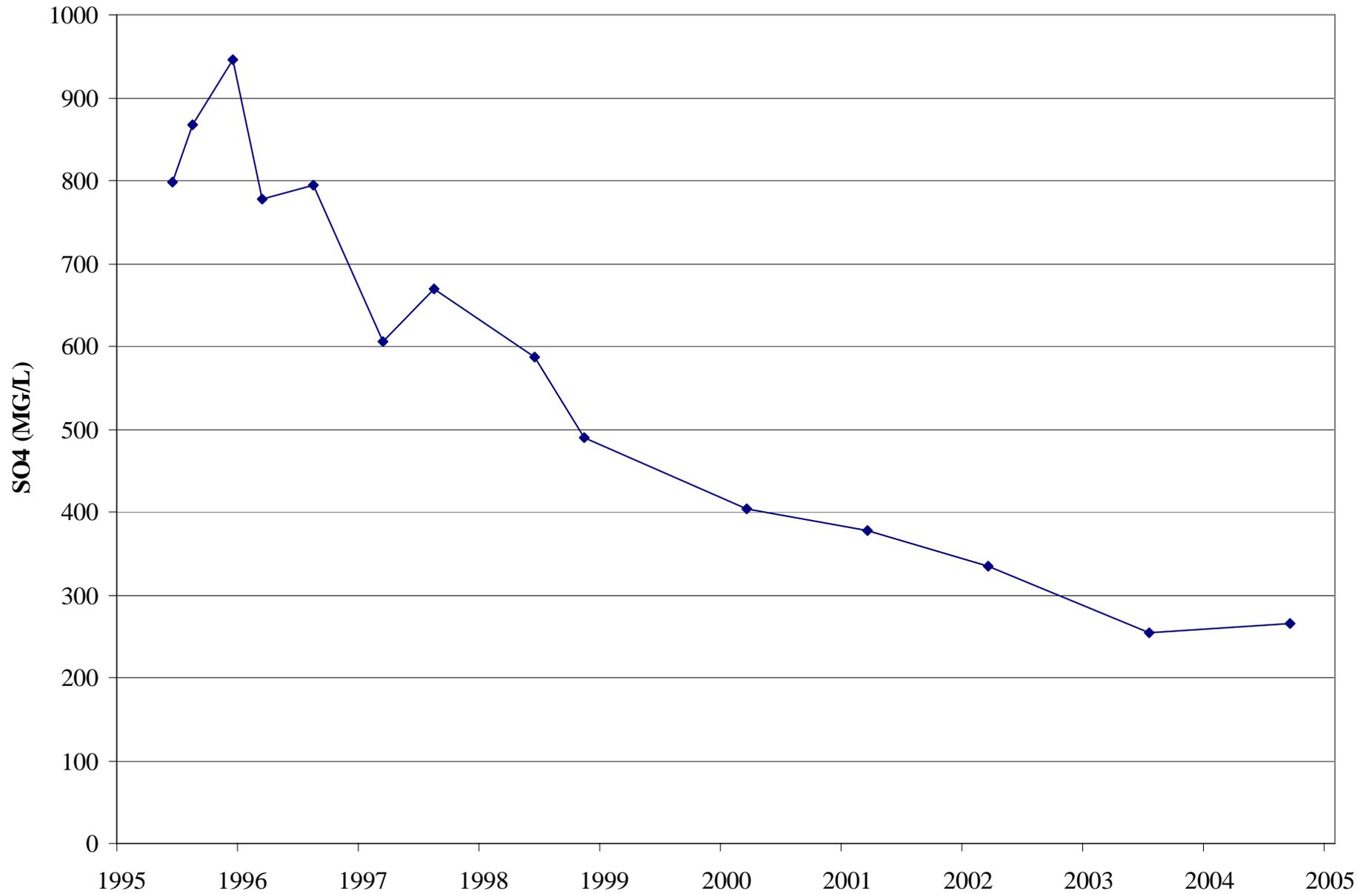
# ECG1115A SO4 CONCENTRATION



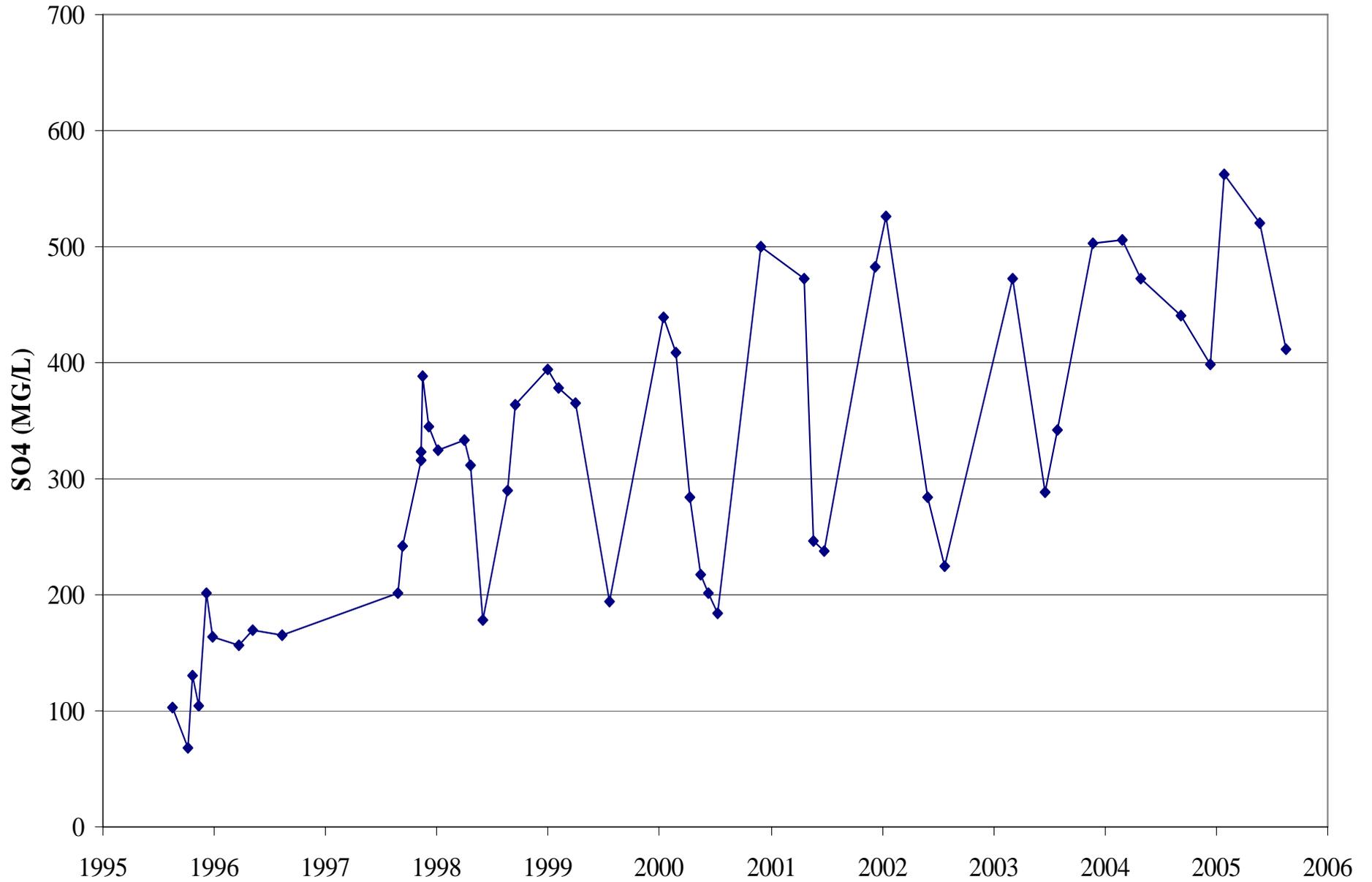
# Acid Plume Acidity



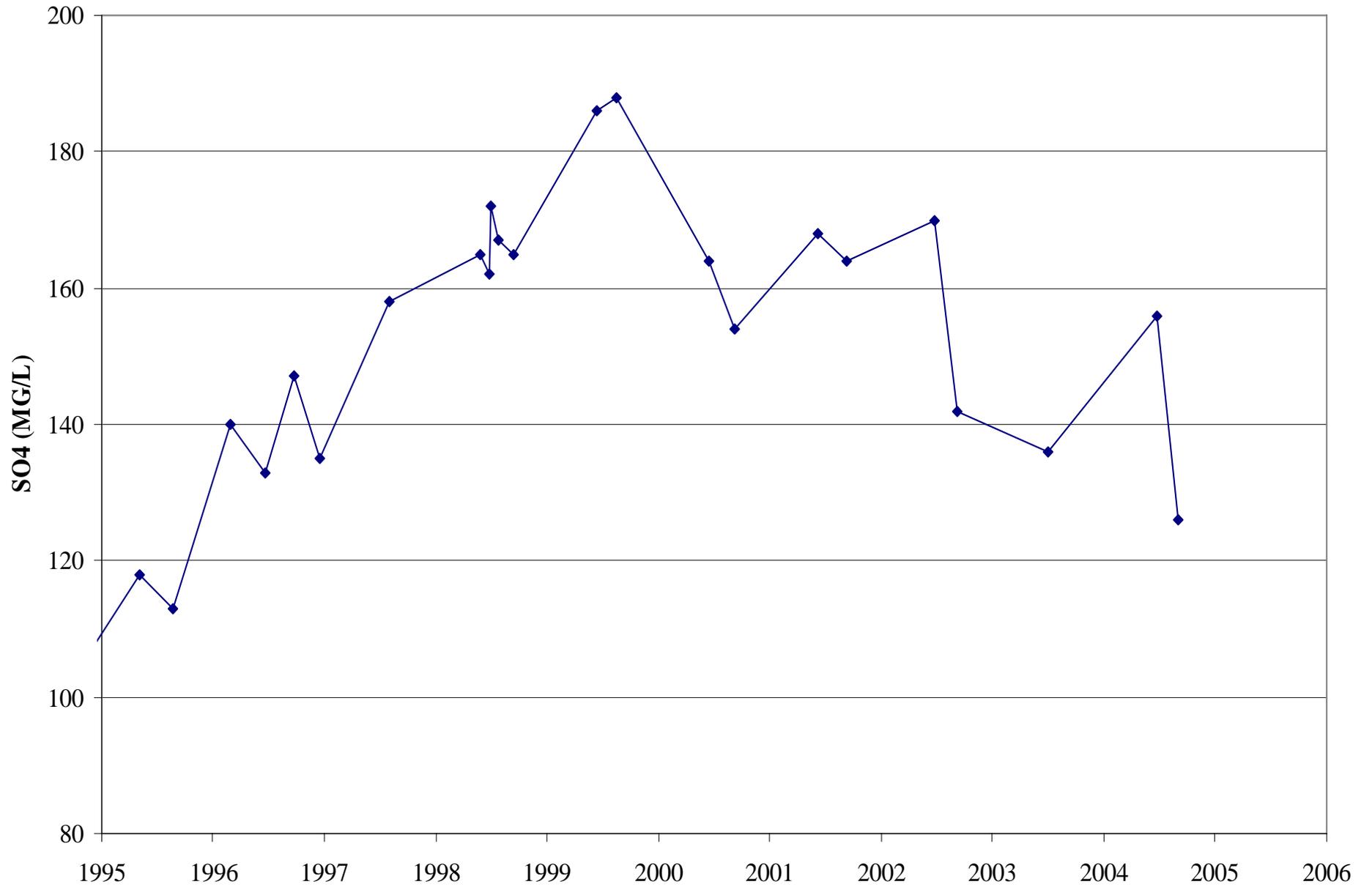
# BSG1137A SO4 CONCENTRATION

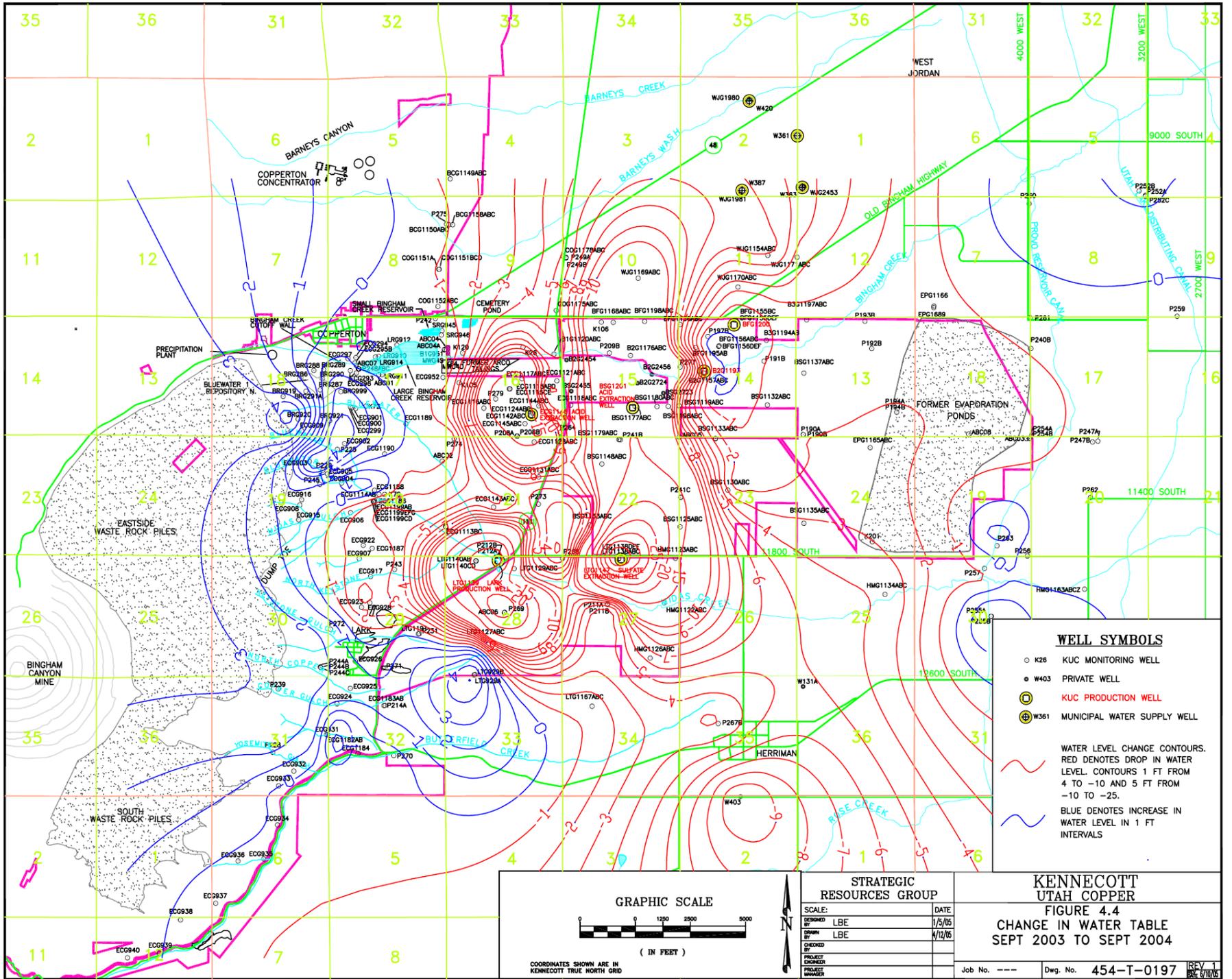


# W1154A SO4 CONCENTRATION



# W363 SO4 CONCENTRATION





**WELL SYMBOLS**

- K26 KUC MONITORING WELL
- W403 PRIVATE WELL
- KUC PRODUCTION WELL
- ⊕ W361 MUNICIPAL WATER SUPPLY WELL

WATER LEVEL CHANGE CONTOURS.  
 RED DENOTES DROP IN WATER LEVEL.  
 CONTOURS 1 FT FROM 4 TO -10 AND 5 FT FROM -10 TO -25.  
 BLUE DENOTES INCREASE IN WATER LEVEL IN 1 FT INTERVALS

**GRAPHIC SCALE**

( IN FEET )

COORDINATES SHOWN ARE IN KENNECOTT TRUE NORTH GRID

STRATEGIC RESOURCES GROUP		DATE
SCALE:		
DESIGNED BY	LBE	1/5/05
DRAWN BY	LBE	4/12/06
CHECKED BY		
PROJECT ENGINEER		
PROJECT MANAGER		

**KENNECOTT UTAH COPPER**

**FIGURE 4.4**  
**CHANGE IN WATER TABLE**  
**SEPT 2003 TO SEPT 2004**

Job No. ---	Dwg. No. 454-T-0197	REV 1
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# Subsidence

- Initial ground elevation survey in December 2002
- Second survey in March 2004
- No notable ground elevation changes



# Looking Ahead

- Planned annual extractions:
  - Barrier Wells/RO Feed: 4670 afy
  - Acid Wells: 2020 afy



# RO Plant

- Pilot plant operated through mid-2004
- Plant expansion began late 2004
- Construction complete in October 2005
- Drinking Water Permit by end 2005
- First water delivery anticipated in early 2006









